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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,963	11/13/2003	Takeshi Fujimoto	2018-803	6722

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EXAMINER	
KAPLAN, HAL IRA	

ART UNIT	PAPER NUMBER
2836	

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/705,963	FUJIMOTO ET AL.	
	Examiner	Art Unit	
	Hal I. Kaplan	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings were received on August 3, 2006. These drawings are accepted.

Claim Objections

2. Claims 13 and 25 are objected to because of the following informalities: Claim 13 line 4 and claim 25 line 4, the phrase "the count" lacks proper antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-14 recite "warming-up means", "pre-start state detecting means", "anomaly detecting means", and "vehicle state detecting means". The specification does not recite or define what any of the "means" is. A means-plus-function limitation in an apparatus claim must be supported by corresponding structure or material in the specification. The proper test for meeting the definiteness requirement is that the corresponding structure (or material or acts) of a means (or step)-plus-function limitation must be disclosed in the specification itself in a way that one skilled in the art will understand what structure (or material or acts) will perform the recited function. See *Atmel Corp. v. Information Storage Devices, Inc.*, 198 F.3d 1374, 1381, 53 USPQ2d

1225, 1230 (Fed. Cir. 1999). See also *In re Dossel,* 115 F.3d 942, 946, 42 USPQ2d 1881, 1884 (Fed. Cir. 1997) and MPEP §§2181(II) and 2185(B). Recitation of specific structure and how the structure performs its respective function would not constitute new matter because the means were recited in the claims as originally filed. Claims 2-14 inherit the deficiencies of the claims from which they depend.

Claims 1 and 15 recite a "component relating to the engine". This is not described in the specification, and one of ordinary skill in the art would not know what is meant because the word "component" and the phrase "relating to" are very vague and indefinite. Almost anything in the vehicle that is dependent on the engine in any way would constitute a "component relating to" the engine. Claims 2-14 and 16-25 inherit this deficiency.

Claims 2 and 16 recite the limitation "vehicle state detecting means for detecting a vehicle state, wherein the pre-start state detecting means detects the pre-start state based on a given signal". The Examiner has assumed for this Office Action that the term "pre-start state" mean the state of the vehicle before it is started. The vehicle state detecting means also detects the vehicle state, in the case of claims 2 and 16 before the vehicle is started. Therefore, without disclosure of corresponding structure, the vehicle state detecting means and the pre-start state detecting means do not have any apparent difference in function. Claims 3-11 and 17-25 inherit this deficiency.

Claims 5 and 18 recite the limitation "when the ON-signal of the driver seat switch is not detected and it is detected that the driver retires from the vehicle, the anomaly detecting means detects the anomaly". It appears that the phrase "is not

detected" should be "is detected". Page 5, lines 15-17 of the substitute specification state that the ON-signal of the driver seat switch should be detected when the driver is seated. Page 9, lines 9-17 state that when the driver is seated (driver seat switch ON) and the driver is in the vehicle (not retired from the vehicle), the diagnosis is normal, and when the driver seat switch is ON but the driver is retired from the vehicle, there is an anomaly. It follows that when the driver seat switch ON-signal is not detected (driver seat switch OFF) and the driver is indeed retired from the vehicle, everything is normal - the driver seat switch ON-signal should only be detected when the driver is seated. An anomaly occurs when the ON-signal is detected, but the driver is not in the vehicle. Claim 5 recites that when the driver seat switch is OFF (driver not seated), and the driver is not seated in the vehicle, there is an anomaly; however, as set forth above, this is the normal condition.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by the US patent of Iwatani et al. (6,629,512).

Iwatani, drawn to an internal combustion engine with heat accumulating device, teaches a system read on the claimed system, comprising: warming-up means (21) for executing warming-up of an engine (10) (see column 9, lines 56-56 and 64-67); pre-

start state detecting means (22a,23a,25a,26,27,27a,28) for detecting a pre-start state by detecting a preparation for a start of the engine (10), wherein the warming-up means (21) executes the warming-up prior to the start of the engine when the pre-start state detecting means (22a,23a,25a,26,27,27a,28) detects the pre-start state (see column 6, lines 45-58 and 66-67, and column 7, lines 10-17); and anomaly detecting means for detecting an anomaly of the pre-start state detecting means (see column 4, lines 33-55 and column 21, lines 2-3 and 5-8).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwatani in view of the US patent of Ajima (5,845,624).

Iwatani teaches all of the claimed features, as set forth above, except for the warming-up means executing the warming-up by controlling an electric current. Ajima, drawn to an air-fuel ratio control system for internal combustion engine, discloses a warming-up means which executes a warming-up by controlling an electric current flowing through a heater provided in a catalytic converter provided in the exhaust gas path for purifying harmful gas (see column 20, lines 12-16). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to build an internal combustion engine with warming-up means provided by a heater in a catalytic converter, rather than through a system that uses heat generated by the engine itself, in order to use less space under the hood and reduce harmful emissions.

Response to Arguments

11. Applicant's arguments, see Remarks, filed August 3, 2006, with respect to the objections and rejections under 35 U.S.C. 112, second paragraph, have been fully considered and are persuasive, except as set forth above. The objections and rejections under 35 U.S.C. 112, second paragraph, have been withdrawn, except as set forth above.

12. As to claim 1, Iwatani discloses pre-start state detecting means for detecting a pre-start state by detecting a preparation operation for a start of an engine. As noted by the Applicant, column 6, lines 45-67 of Iwatani states the following:

"Further, the ECU 30 executes an operation of the starter 26 and a start ignition of the engine 10 according to the operation of the ignition key 27a.

Further, a display device 28 turns on a light or displays letters or the like on the basis of a command signal from the ECU 30, and gives a visual information to the driver of the engine system 100.

The ECU 30 is electrically connected to various kinds of sensors outputting signals for knowing the operation state of the engine 10 and various kinds of drive circuits for controlling the operation state of the engine 10 in addition to members such as the electric type ventilating fans 22a and 23a, the water temperature sensor 25a, the starter 26, the key cylinder 27, the ignition key 27a and the display device 28.

Further, the ECU 30 is provided with a central processing unit (CPU) 31, a read only memory (ROM) 32, a random access memory (RAM) 33, a backup RAM 34, a timer counter 35 and the like, in an inner portion thereof. A logical operation circuit is constituted by connecting the respective portions (31,32,33,34,35) to an external input circuit 36 and an external output circuit 37 by a bus 38. In this case, the ROM 32 previously stores various kinds of programs for controlling an operating state of the engine 10 ..."

Column 7, lines 10-17 states the following:

"The external output circuit includes a drive circuit and the like. The ECU 30 constituted in the manner mentioned above executes various kinds of controls with respect to the fuel injection of the engine 10, the ignition or the flow of the cooling water on the basis of the signals output from the various kinds of sensors, the key cylinder 27 and the like which are taken in via the external input circuit 36."

The specification does not define specifically what constitutes a "preparation operation" or how and by what structure it is detected, and one of ordinary skill in the art would not be able to determine what a "preparation operation" is or how it is detected. The Examiner has assumed that a "preparation operation" for a start of the engine is any action, measurement, etc., taken before the engine is started that is in any way related to the engine starting. The signals output from the various kinds of sensors (e.g.

water temperature, starter, key cylinder, ignition key) output signals indicating the operation state of the engine before it is started, the signals being used to execute controls to prevent harmful conditions that might occur if the engine is started without the controls being executed, as set forth above; therefore, the taking of the signals constitutes a preparation operation for the start of the engine.

As to the anomaly detecting means, as noted by Applicant, column 4, lines 33-55 and column 21, lines 2-8 of Iwatani states the following:

"The cooling system 20 is constituted by a circulating passage (a water jacket) A formed in such a manner as to surround an outer periphery of the respective combustion chambers and the intake and exhaust ports within the engine 10, a circulating passage B circulating cooling water between the engine 10 and a heat accumulating device 21, a circulating passage C circulating cooling water (a cooling medium) between the engine 10 and a radiator 22, and a circulating passage D circulating water between the engine 10 and a heater core for heating 23. Further, a part of the circulating passage A is commonly used as part of each of the circulating passages B, C and D. Further, the circulating passage A can be substantially separated into a circulating passage A1 formed within the cylinder block 10a, a passage A2 formed within the cylinder head 10b, and a bypass passage A3 connecting the circulating passage A1 to the passage A2.

That is, the cooling system 20 corresponds to a complex system constructed by combining a plurality of cooling water circulating passages, and the cooling water circulating within the cooling system 20 cools or warms up each of the portions in the engine 10 by serving as a heat transfer medium so as to perform a heat exchange with the engine 10".

"...in the case that any abnormality is generated in the engine system 100 (particularly, in the cooling system 20) or the preheat execution is cancelled on the basis of the intentional operation of the driver, the start inhibition of the engine during the preheat is canceled, whereby it is possible to obtain an additional effect that a convenience is increased with respect to the operation of the engine system 100."

Any abnormality that is generated clearly has to be detected somehow, by an anomaly detecting means. In this case, one of the anomalies detected is an anomaly in the cooling system 20, which comprises pre-start state detecting means 22a and 23a,

as set forth above. An abnormality in the cooling system 20 is likely to be caused, for example, by an abnormality in the radiator 22 or heater core for heating 23. Thus, Iwatani clearly discloses an abnormality of a pre-start detecting means.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hal I. Kaplan whose telephone number is 571-272-8587. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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